

ABSTRACT

The invention relates to a self-healing membrane, especially for using in PEM fuel cells. Said membrane comprises at least one porous material which is not ion-conductive and at least one polymer, ion-conductive electrolyte which has a higher melting point or decomposition point than the porous material which is not ion-conductive. If a hole, crack or the like forms in the membrane, the porous material which is not ion-conductive melts due to the temperature rise occurring at the leaking point, before the polymer, ion-conductive electrolyte melts or decomposes and seals the membrane at this point. The inventive membrane heals occurring defects itself in this way, and is thus self-healing.